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16 NOV 2000

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PCT Applicant's Guide - Volume II - National Chapter - US Annex US.II, page 1

FORM PTO-1390  
(REV 10-97)

U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE

DATE: November 16, 2000

EXPRESS MAIL LABEL NO.  
EL585713184USATTORNEY DOCKET NO.  
420115-56 LB13 /SC18U.S. APPLICATION NO.  
To Be Assigned

09/700968

**TRANSMITTAL LETTER TO THE UNITED STATES  
DESIGNATED/ELECTED OFFICE (DO/EO/US)  
CONCERNING A FILING UNDER 35 U.S.C. 371**INTERNATIONAL APPLICATION NO.  
PCT/GB99/01555INTERNATIONAL FILING DATE  
17.May.1999 (17.05.99)PRIORITY DATE CLAIMED  
16.May.1998 (16.05.98)

TITLE OF INVENTION

**WATER FLOW CONTROL SYSTEM**

APPLICANT(S) FOR DO/EO/US

**Christopher J. PRATT**

Applicant herewith submits to the United States Designated/Elected Office (DO/EO/US) the following items and other information:

1. ☒ This is a **FIRST** submission of items concerning a filing under 35 U.S.C. 371.
2. ☐ This is a **SECOND** or **SUBSEQUENT** submission of items concerning a filing under 35 U.S.C. 371.
3. ☒ This is an express request to begin national examination procedures (35 U.S.C. 371(f) at any time rather than delay examination until the expiration of the applicable time limit set in 35 U.S.C. 371(b) and PCT Articles 22 and 39(1).
4. ☒ A proper Demand for International Preliminary Examination was made by the 19<sup>th</sup> month from the earliest claimed priority date.
5. ☒ A copy of the International Application as filed (35 U.S.C. 371©(2)).
  - a. ☒ is transmitted herewith (required only if not transmitted by the International Bureau).
  - b. ☒ has been transmitted by the International Bureau.
  - c. ☐ is not required, as the application was filed in the United States Receiving Office (RO/LUS).
6. ☐ A translation of the International Application into English (35 U.S.C. 371©(2)).
7. ☐ Amendments to the claims of the International Application under PCT Article 19 (35 U.S.C. 371©(3)).
  - a. ☐ are transmitted herewith (required only if not transmitted by the International Bureau).
  - b. ☐ have been transmitted by the International Bureau.
  - c. ☐ have not been made; however, the time limit for making such amendments has NOT expired.
  - d. ☐ have not been made and will not be made.


8. ☐ A translation of the amendments to the claims under PCT Article 19 (35 U.S.C. 371©(3)).
9. ☒ An oath or declaration of the inventor(s) (35 U.S.C. 371©(4)). (UNEXECUTED)
10. ☐ A translation of the annexes to the International Preliminary Examination Report under PCT Article 36 (35 U.S.C. 371©(5)).

**Items below concern other document(s) or other information included:**

11. ☒ An Information Disclosure Statement under 37 CFR 1.97 and 1.98.
12. ☐ An assignment document for recording. A separate cover sheet in compliance with 37 CFR 3.28 and 3.31 is included.
13. ☒ A FIRST preliminary amendment.
  - ☐ A SECOND or SUBSEQUENT preliminary amendment.
14. ☐ A substitute specification.
15. ☐ A change of power of attorney and/or address letter.
16. ☐ Small entity claim with a copy of this transmittal letter attached.
17. ☒ International search report.
18. ☒ International preliminary examination report.
19. ☒ International Application with Annexes to IPER Incorporated
20. ☒ Extra Set of Drawings
21. ☐

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SN487131259573

U.S. APPLICATION NO. (if known, see 37 CFR 1.5) To Be Assigned <b>09/700968</b>		INTERNATIONAL APPLICATION NO. PCT/GB99/01555	ATTORNEY DOCKET NO. 420115-56 LB13/SC18	
<input checked="" type="checkbox"/> The following fees are submitted: (see Note (1) below) <b>Basic National Fee (37 CFR 1.492(a)(1)-5)):</b> Search Report has been prepared by the EPO or JPO.....\$ <b>860.00</b> International preliminary examination fee paid to USPTO (37 CFR 1.482).....\$ <b>670.00</b> No international preliminary examination fee paid to USPTO (37 CFR 1.482) but international search fee paid to USPTO (37 CFR 1.445(a)(2)).....\$ <b>750.00</b> Neither international preliminary examination fee (37 CFR 1.482) nor international search fee (37 CFR 1.445(a)(2)) paid to USPTO.....\$ <b>1000.00</b> International preliminary examination fee paid to USPTO (37 CFR 1.482) and all claims satisfied provisions of PCT Article 33(2)-(4).....\$ <b>100.00</b> <b>ENTER APPROPRIATE BASIC FEE AMOUNT =</b>			<b>CALCULATIONS</b>	<b>PTO USE ONLY</b>
			\$ <b>860.00</b>	
Surcharge of \$ <b>130</b> for furnishing the oath or declaration later than <input type="checkbox"/> 20 <input checked="" type="checkbox"/> 30 months from the earliest claimed priority date (37 CFR 1.492(e)).			\$ <b>130.00</b>	
<b>Claims</b>	<b>Number Filed</b>	<b>Number Extra</b>	<b>Rate</b>	
Total Claims	11 <sup>+3</sup> -20=	0	0 X \$18	\$
Independent Claims	1 -3=	0	0 X \$78	\$
Multiple dependent claim(s) (if applicable)			+ \$260	\$ <b>260.00</b>
<b>TOTAL OF ABOVE CALCULATIONS =</b>			\$ <b>1250.00</b>	
Reduction by ½ for filing by small entity, if applicable. Verified Small entity statement must also be filed. (Note 37 CFR 1.9, 1.27, 1.28).			\$	
<b>SUBTOTAL =</b>			\$	
Processing fee of \$ <b>130</b> for furnishing the English translation later than <input type="checkbox"/> 20 <input type="checkbox"/> 30 months from the earliest claimed priority date (37 CFR 1.492(f)).			\$	
<b>TOTAL NATIONAL FEE =</b>			\$	
Fee for recording the enclosed assignment (37 CFR 1.21(h)). The assignment must be accompanied by an appropriate cover sheet (37 CFR 3.28, 3.31). \$ <b>40.00</b> per property			\$	
<b>TOTAL FEES ENCLOSED =</b>			\$ <b>1250.00</b>	
<b>Note (1):</b> The basic national fee must be paid when filing this application. The 20-month time limit (37 CFR § 1.494) and 30-month time limit (37 CFR § 1.495) are not extendable.			Amount to be: refunded	\$
			charged	\$
a. <input checked="" type="checkbox"/> A check in the amount of \$__ to cover the above fees is enclosed. b. <input type="checkbox"/> Please charge my Deposit Account No. _____ in the amount of \$_____ to cover the above fees. A duplicate copy of this sheet is enclosed. c. <input checked="" type="checkbox"/> The Commissioner is hereby authorized to charge any additional fees which may be required, or credit any overpayment to Deposit Account No. <u>16-2230</u> . A duplicate copy of this sheet is enclosed.				
<b>NOTE (2):</b> Where an appropriate time limit under 37 CFR 1.494 or 1.495 has not been met, a petition to revive (37 CFR 1.137(a) or (b)) must be filed and granted to restore the application to pending status.				
SEND ALL CORRESPONDENCE TO:  <b>Louis J. Bovasso, Esq.</b> <b>OPPENHEIMER WOLFF &amp; DONNELLY LLP</b> <b>2029 Century Park East, #3800</b> <b>Los Angeles, CA 90067-3024</b>				
			By  <b>Louis J. Bovasso, Esq.</b> Reg. No. 24,075	

Application No. To Be Assigned

PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

*This paper or fee is being deposited with the United States Postal Service "Express Mail  
Post Office to Addressee" under 37 CFR § 1.10, Mailing Label No. EL585713184US*

Applicant : Christopher J. Pratt  
Application No. : To Be Assigned  
Filed : November 16, 2000  
Title : WATER FLOW CONTROL SYSTEM  
Grp./Div. : To Be Determined  
Examiner : To Be Determined  
Docket No. : 420115-56

PRELIMINARY AMENDMENT

Assistant Commissioner for Patents  
Washington, D.C. 20231

2029 Century Park East, Suite 3800  
Los Angeles, California 90067-3024  
November 16, 2000

Commissioner:

Please amend the above-identified application as follows:

IN THE CLAIMS

Claim 5, line 1, delete "or 4".

Claim 8, line 3, delete "any of claims 1 to 8" and insert therefor --claim 1--.

REMARKS

In view of the foregoing amendment, consideration and allowance of this application is respectfully requested.

Respectfully submitted,

OPPENHEIMER WOLFF & DONNELLY LLP

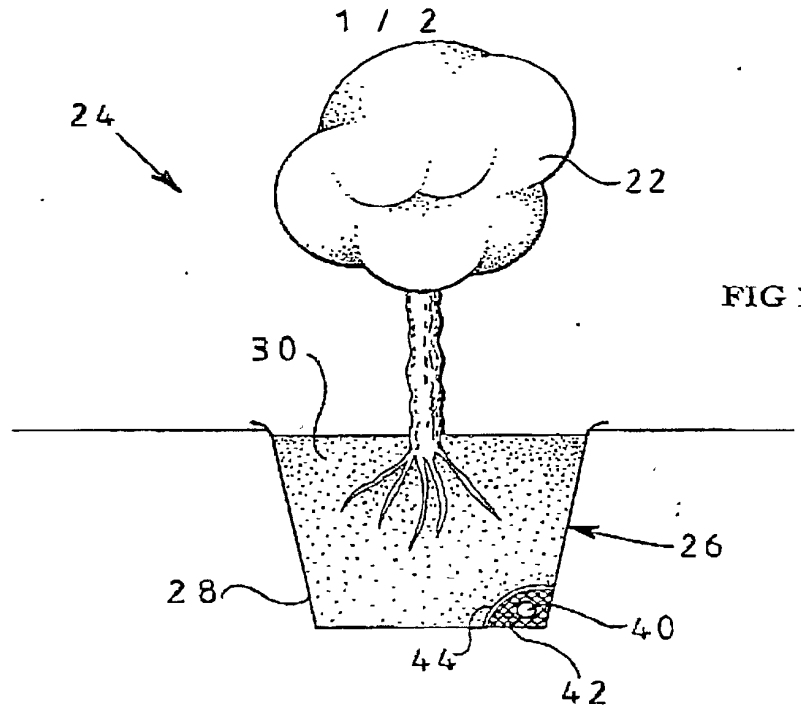
By Louis J. Bovasso  
Louis J. Bovasso, Esq.  
Reg. No. 24,075  
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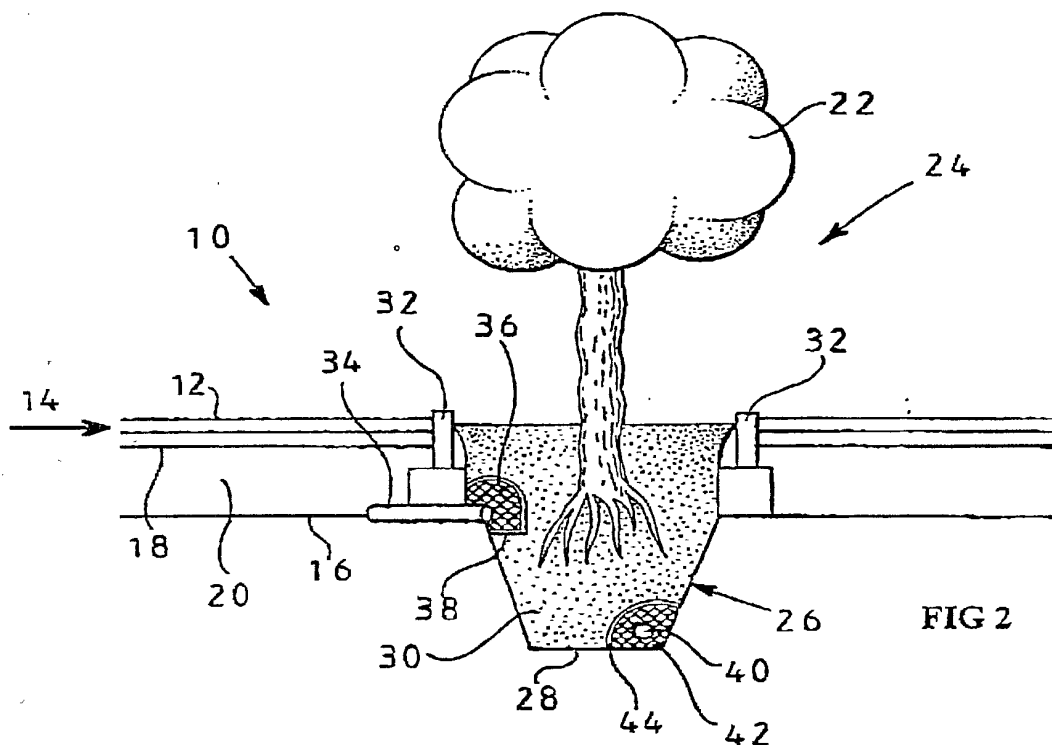


FIG 2

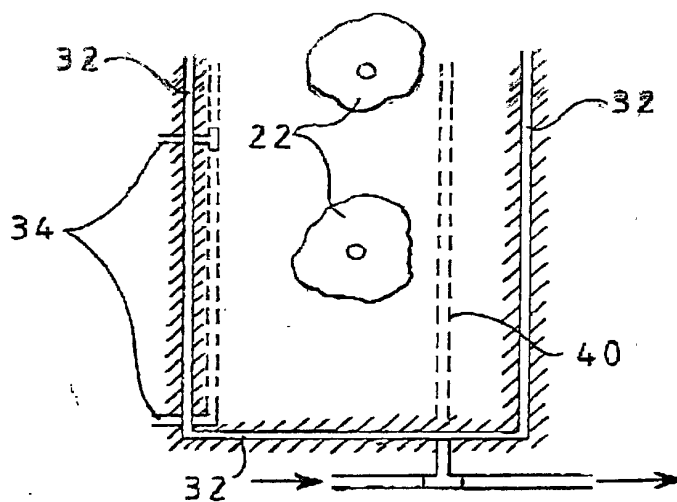


FIG 3

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### Water flow control system

The present invention relates to a planting system for regulating the supply of water to a plant and to a paving system incorporating such a planting system.

5 It is known to plant plants in a plant growing medium contained within a liner, supported by the surrounding substrate layer, in order to provide a controlled environment for that plant. In order to prevent excess water collecting in the liner and causing the plant to become water logged, it is known to provide drainage holes in the liner to allow water to drain from the plant growing medium to the substrate layer. In sites where it is generally desirable to prevent water from draining into the surrounding substrate layer, for example where the  
10 substrate is a potential source of pollution, such as a landfill site, it is not possible to use such a planting system.

It is known from European Patent No 0 786 034 to provide a paving system for spillage or floodwater management comprising a permeable layer providing an upper surface; at least one supporting substrate layer thereunder which is permeable to liquid and a containment  
15 membrane of impermeable material containing said substrate layer for controlled retention of liquid therein. In a preferred embodiment of the paving system described in that specification, the paving system is provided with valves and discharge ducts for drainage. The paving system according to European Patent No 0 786 034 is particularly suitable for use in areas where there is a risk of spillage of fluids which must be prevented from entering  
20 the environment before treatment. It is a disadvantage of the paving system according to European Patent No 0 786 034 that, where it is used in areas where there is no such risk, the surface water which drains from it must either be discharged to waste or to a storage tank for further use.

The present invention seeks to provide an improved planting system.

25 Accordingly, the present invention provides a planting system for regulating the supply of

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water to a plant, the system comprising a liner containing a volume of plant growing medium;

characterised in that:

the liner is impermeable to water;

- 5 the system further comprises drainage means adapted to drain water from the plant growing medium contained within the liner and convey the drained water to a desired location;

and wherein the liner serves to prevent drainage of water from the medium into the surrounding subsoil.

- 10 The present invention further provides a paving system comprising at least a surface layer provided with an island in the form of a hole or trench for receipt of a plant, in combination with a planting system according to the immediately preceding paragraph

The present invention is further described hereinafter by way of example, with reference to accompanying drawings, in which:

Figure 1 is a side elevation, partly in section of an embodiment of a planting system;

- 15 Figure 2 is a side elevation, partly in section of an embodiment of a paving system; and

Figure 3 is a plan view of the embodiment of Figure 2.

- 20 As is shown in Figure 1, a tree or shrub 22 is planted within an island 24. The island is in the form of a trench or hole 26 which is lined with a layer 28 which is a water impermeable membrane. The membrane 28 covers the bottom and side walls of the hole 26 with the upper edges of the membrane 28 abutting the surface of the surrounding area. Soil 30 is contained in the hole 26 by the membrane 28.

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A channel in the form of a pipe 40 which passes through the membrane 28 facilitates drainage of excess water from or into the soil 30.

The channel 40 is conveniently in the form of a perforated pipe and is advantageously surrounded by particulate material such as gravel 42 in turn surrounded by a dispersing layer 44, typically geotextile material.

As can be seen from Figure 2, if it is desired to plant a tree or shrub 22 within an area covered by a paving system 10 this can be achieved by using the "island" 24 of Figure 1. The paving system has a surface layer 12 which is a permeable layer to allow liquid such as rain water to run through into a channel 14 formed by a containment layer 16. The containment layer 16 is impervious to liquid and is conveniently in the form of a plastics membrane.

The permeable layer 12 may be a single sheet laid or cast over the whole of, or a large section of, an area e.g. asphalt or concrete, which is porous. Perforations, conveniently in the form of simple holes, may be provided in a layer of normally impervious material to render the layer porous to liquid. However, it is advantageous to have holes of small span to stop ingress of foreign objects, but of long periphery to facilitate dispersion of the liquid underneath the pavement. Slot-like holes are therefore attractive, and these can conveniently be provided by grooves on the outside of prefabricated pavings.

In a further preferred arrangement, the layer 12 may be formed by discrete pavings of such size and mass as to be convenient to handle continually without fatigue, and designed to be laid close-fitting without mortar or cement. They may be made in any material suitable for any particular application, such as brick, concrete or cast iron, and must be of sufficient depth to ensure dispersion of the concentrated loads applied. Concurrently, they are of sufficient depth to prevent them tipping over under load, given the lateral freedom allowed by close-fitting laying. Pavings may have holes through them, but from many points of view it is preferable that the perforations be grooves in the interfaces separating adjacent pavings. Paviours find this type of pavement cheap and easy to lay, with the further advantage that

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pavings can easily be lifted when required.

The incorporation of raised pads on the upper surfaces of at least some of the pavings prevents compression of the gravel filling around the paving and reduces the danger of hydroplaning in storm conditions, and is a preferred feature.

- 5 A dispersing layer 18 of gravel is provided beneath the permeable layer 12 with a further substrate layer 20 of, for example, crushed stone provided beneath the dispersing layer 18 and above the containment layer 16. The dispersing layer 18 is for dispersing liquid permeating from the permeable layer 12.

- 10 A filtering layer (not shown) may be provided intermediate the permeable layer 12 and dispersing layer 18 or more preferably between the dispersing layer 18 and the substrate layer 20 for filtering solids from liquid permeating through the permeable layer 12. The filtering layer is conveniently a geotextile layer. This is preferably between 1mm and 1.5mm thick.

The containment layer 16 is preferably between 1mm and 1.5mm thick.

- 15 The layer 18 is of gravel or crushed gravel or other small grained particulate material (the dispersing layer 18). Where the permeable layer 12 is perforated, the same or similar material is dropped into the perforations (and around any raised pads which may be present where the layer 12 is of discrete pavings or paving slabs). The layer 18 is a material which is not readily friable, dissolved or susceptible to frost and is substantially inert to water. The particle size is preferably of a minimum 5mm diameter to a maximum of 10mm diameter.
- 20 The particle size may vary within the above range in the layer 18.

This particulate layer 18 provides a flat surface for paving slabs and ensures that the geotextile filtering layer beneath it is uniformly loaded. Moreover, it helps to disperse the fluid from the surface layer 12 uniformly over the surface of the geotextile layer, and provides an initial screening of the fluid to minimise clogging of the geotextile layer beneath.

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- Beneath the geotextile layer is the substrate proper (the substrate layer 20) which lies on, and is contained by, the containment layer 16 described above. This substrate layer 20 is a deep layer of mainly hard nodules. These could be hollow, and there may be advantage in some being hollowed out or drilled as described below, but they are most efficient when solid.
- 5 They are of irregular or lobate form so that they remain firmly in place under load but are surrounded by interstitial cavities in which the drained fluid can dwell.

- These nodules may be of any suitable material: crushed stone, pebbles and blast furnace slag are typical examples, but special materials or shapes may be needed in particular applications. The size and type of nodule affects the storage and release capabilities of the system. The material used for the substrate layer 20 is also a material which is not readily friable, dissolved or susceptible to frost. It is also substantially inert to water. The material consists of particles of differing sizes in the range 15mm to 300mm (preferably 15 mm to 200 mm) and the particle size may vary within the substrate layer. However, the majority of particles in the material are preferably of a size nearer the lower end of this range.
- 10

- 15 The membrane 28 covers the bottom and side walls of the hole 26 with the upper edges of the membrane 28 abutting or mating with the containment layer 16.

The paving system 10 is separated from soil 30 contained in the hole 26 by a wall or walls 32 (such as kerb stones) which are generally impervious to water and which therefore prevent the unrestricted flow of water into the soil contained by the membrane 28.

- 20 In order to allow a regulated flow of water from the paving system 10 into the soil 30 for the tree or bush 22, one or more openings are provided in the walls 32. These openings are conveniently formed by one or more pipes 34 which pass from the substrate layer 20 through the wall or walls 32 and open into an area of gravel 36 covered by a further filtering layer 38 which is again conveniently a geotextile material layer.

- 25 The pipes 34 can extend both into the gravel 36 and into the substrate 20 and may be perforated for ease of flow of water.

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The geotextile layer 38 disperses the water from the pipes 34 into the soil surrounding the tree or bush 22.

The substrate 20 and particulate material 36, 42 may be similar or of the same type

Figure 3 is a plan view of the system of Figure 2 showing the walls 32, two trees or bushes 5 22, the pipes 34 and the drainage pipe 40.

It will be appreciated that the present invention is also suitable for use with existing paving systems where the upper surface layer is not permeable. In such cases, surface water lying on the upper surface layer may run off the surface and into the plant growing medium. This supply of run-off water could replace or complement the water supplied through the pipe or 10 pipes 34 in order to irrigate the plant in the plant growing medium

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## Claims

1. A planting system for regulating the supply of water to a plant (22), the system comprising a liner (28) containing a volume of plant growing medium (30);

characterised in that:

5 the liner is impermeable to water;

the system further comprises drainage means (40) adapted to drain water from the plant growing medium (30) contained within the liner (28) and convey the drained water to a desired location;

10 and wherein the liner (28) serves to prevent drainage of water from the medium (30) into the surrounding subsoil.

2. A system according to claim 1 characterised in that the liner (28) is a plastics material.

3. A system according to claims 1 or 2 characterised in that the drainage means (40) comprises a pipe.

15 4 A system according to claim 3 characterised in that the pipe (40) is provided with perforations.

5. A system according to claim 3 or 4 characterised in that the section of the pipe (40) located within the liner (28) is surrounded by a particulate material (42).

6 A system according to claim 5 characterised in that the particulate material (42) is  
20 gravel.

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7. A system according to claim 5 or 6 characterised in that the particulate material (42) is surrounded by a dispersing layer (44).
8. A paving system comprising at least a surface layer (12) provided with an island (24) in the form of a hole or trench for receipt of a plant, in combination with a planting system
- 5 as claimed in any of claims 1 to 8.
9. A paving system according to claim 8 characterised in that the surface layer (12) is impervious to water.
10. A paving system according to claim 8 characterised in that it comprises:  
a permeable layer (12) providing an upper surface;  
10 at least one supporting substrate layer (20) thereunder which is permeable to liquid;  
and duct means (34) for allowing the regulated passage of water from said substrate layer to the plant growing medium (30).
11. A paving system according to claim 10 characterised in that it further comprises a containment layer (16) containing said substrate layer for preventing egress of water
- 15 from said supporting substrate layer (20) into surrounding ground.

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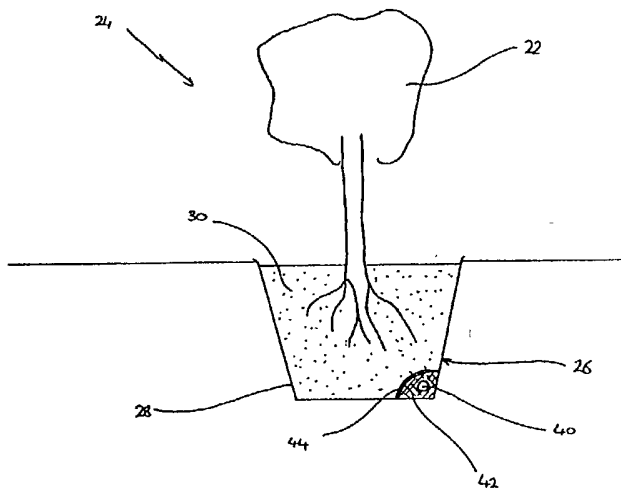
WORLD INTELLECTUAL PROPERTY ORGANIZATION  
International Bureau



INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(51) International Patent Classification <sup>6</sup> : <b>A01G 9/00, E01C 9/00</b>		<b>A1</b>	(11) International Publication Number: <b>WO 99/59397</b>
			(43) International Publication Date: 25 November 1999 (25.11.99)
(21) International Application Number: PCT/GB99/01555		(81) Designated States: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZA, ZW, ARIPO patent (GH, GM, KE, LS, MW, SD, SL, SZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG).	
(22) International Filing Date: 17 May 1999 (17.05.99)		<b>Published</b> <i>With international search report.</i>  <i>This paper or fee is being deposited with the United States Postal Service "Express Mail Post Office to Addressee" under 37 CFR § 1.10 Mailing Label No. <u>EL585713184US</u></i>	
(30) Priority Data: 9810444.1 16 May 1998 (16.05.98) GB			
(71) Applicant (for all designated States except US): COVENTRY UNIVERSITY [GB/GB]; Priory Street, Coventry CV1 5FB (GB).			
(72) Inventor; and (75) Inventor/Applicant (for US only): PRATT, Christopher, John [GB/GB]; School of the Built Environment, Coventry University, Priory Street, Coventry CV1 5FB (GB).			
(74) Agent: HALLAM, Arnold, Vincent; Lewis & Taylor, 5 The Quadrant, Coventry CV1 2EL (GB).			

(54) Title: WATER FLOW CONTROL SYSTEM



(57) Abstract

A planting system for regulating the supply of water to a plant comprises a liner (28) for containing a volume of plant growing medium (30), such as soil, and drainage means adapted to drain water from the plant growing medium (30) contained within the liner (28) and convey the drained water to a desired location. A paving system (10) comprises a permeable layer (12) providing an upper surface; at least one supporting substrate layer (20) thereunder which is permeable to liquid, a containment membrane (28) of impermeable material containing said substrate layer (20) for controlled retention of water therein and duct means for allowing the passage of water from the substrate layer (20) to a plant growing medium (30).

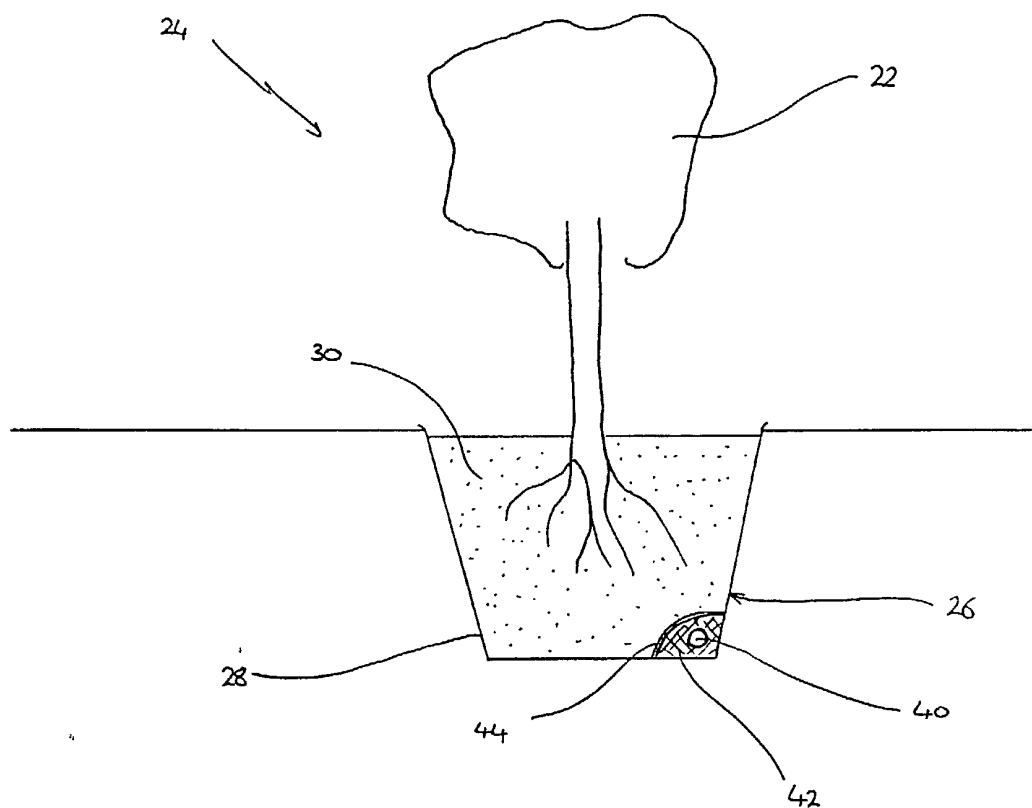


Fig. 1

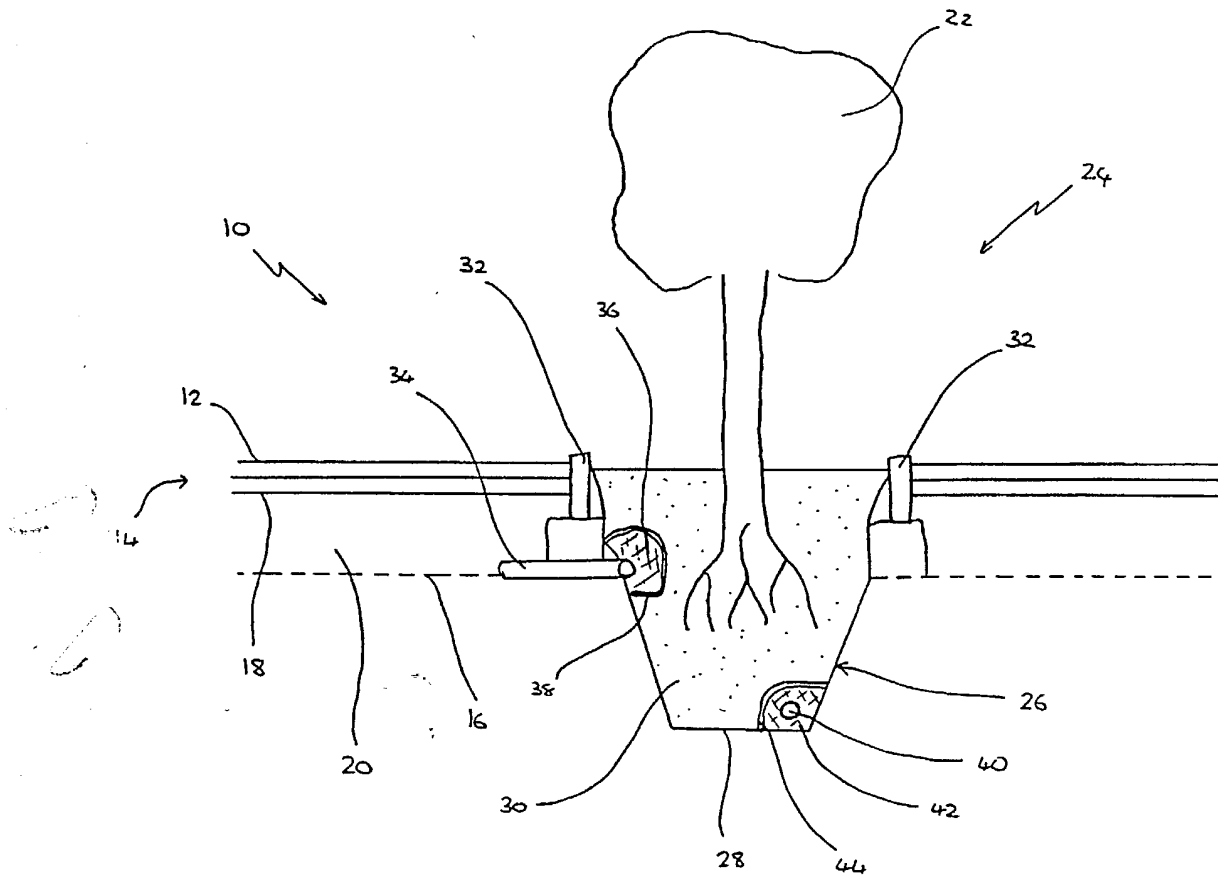


Fig. 2



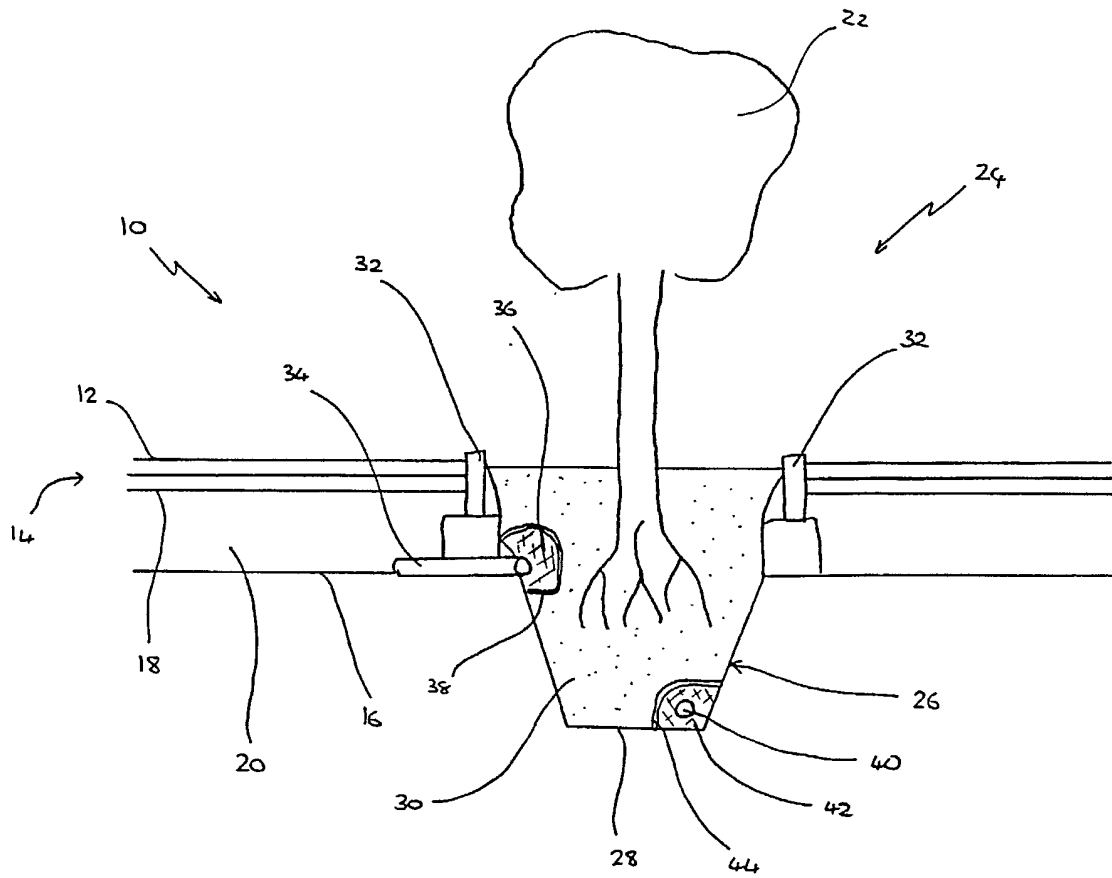


Fig. 3

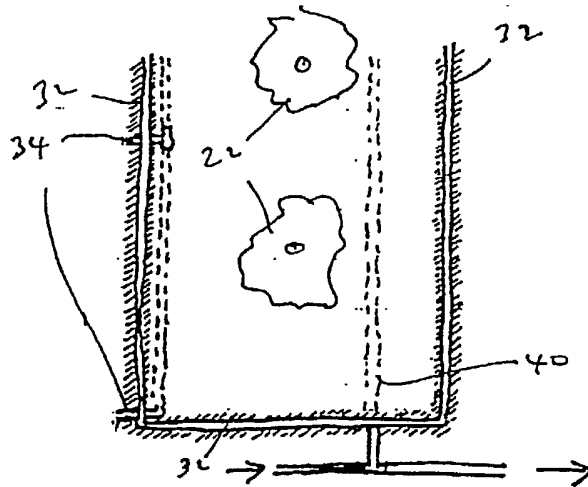


Fig. 4

Rev. 5/00

DECLARATION AND POWER OF ATTORNEY  
FOR PATENT APPLICATIONS

PATENT

Docket No. : 420115-56

As an inventor, I declare:

My residence address and citizenship are as stated next to my name. I believe I am the original, first and sole inventor (if only one name is listed below), or a joint inventor (if plural names are listed below) of the invention claimed in the patent application entitled:

(1) WATER FLOW CONTROL SYSTEM

the specification of which

(2) \_\_\_\_\_ is attached.

(3) X was filed on 17.May.1999 as Serial No. PCT/GB99/01555 and was amended on 13.June.2000 (if applicable)

I have reviewed and understand the contents of the specification, including the claims, as amended by any amendment referred to above. I acknowledge the duty to disclose information which is material to the patentability of this application in accordance with 37 CFR § 1.56.

(4) \_\_\_\_\_ I hereby claim the benefit under Title 35, U.S.C. § 119(e) of any United States provisional application(s) listed below.

Application Serial Number

Filing Date

Application Serial Number

Filing Date

(5) X I claim foreign priority benefits under 35 U.S.C. § 119(a)-(d) of the foreign application(s) for patent or inventor's certificate listed below, and I have also identified below any foreign application for patent or inventor's certificate having a filing date before that of the application on which priority is claimed.

Prior Foreign Application(s)

Priority Claimed

<u>9810444.1</u>	<u>Great Britain</u>	<u>16.May.1998</u>	<u>X</u>	
Number	Country	Day/Month/Year	Yes	No
Number	Country	Day/Month/Year	Yes	No

(6) \_\_\_\_\_ I claim the benefit under 35 U.S.C. § 120 of any United States application(s) listed below, and, insofar as this application discloses and claims subject matter not disclosed in the prior United States application in the manner provided by the first paragraph of 35 U.S.C. § 112, I acknowledge the duty to disclose material information as defined in 37 CFR § 1.56 which occurred between the filing date of the prior application and the national or Patent Cooperation Treaty International filing date of this application:

Application Serial Number	Filing Date	Patented/Pending/Abandoned
Application Serial Number	Filing Date	Patented/Pending/Abandoned

I declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under 18 U.S.C. § 1001, and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

(7) **POWER OF ATTORNEY:** I appoint the following attorneys and agents of the law firm OPPENHEIMER WOLFF & DONNELLY LLP to prosecute this application and any international application under the Patent Cooperation Treaty based on it and to transact all business in the U.S. Patent and Trademark Office connected with either of them in accordance with instructions from the assignee of the entire interest in this application; or from the first or sole inventor named below in the event the application is not assigned; or from LEWIS & TAYLOR, Coventry, England in the event the power granted herein is for an application filed on behalf of a foreign attorney or agent.

Charles Berman	<u>29,249</u>	Michael D. Harris	<u>26,690</u>	Charles Rosenberg	<u>31,464</u>
Alan P. Block	<u>35,450</u>	Douglas N. Larson	<u>29,401</u>	Guy P. Smith	<u>20,142</u>
Louis J. Bovasso	<u>24,075</u>	Spyros James Lazaris	<u>45,981</u>	Gregory B. Wood	<u>28,133</u>
Marc E. Brown	<u>28,590</u>	Sung Oh	<u>45,583</u>		
Christopher Darrow	<u>30,166</u>	David J. Oldenkamp	<u>29,421</u>		
Michael B. Farber	<u>32,612</u>	William Poms	<u>18,782</u>		
Scott R. Hansen	<u>38,486</u>	Alan C. Rose	<u>17,047</u>		

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DECLARATION AND POWER OF ATTORNEY FOR PATENT APPLICATIONS

Rev. 5/00

**DECLARATION AND POWER OF ATTORNEY  
FOR PATENT APPLICATIONS**

PATENT

Docket No. : 420115-56

The authority under this Power of Attorney of each person named above shall automatically terminate and be revoked upon such person ceasing to be a member or associate of or of counsel to that law firm.

**SEND CORRESPONDENCE TO:** OPPENHEIMER WOLFF & DONNELLY LLP, 2029 Century Park East, Suite 3800, Los Angeles, CA 91109-7068

**DIRECT TELEPHONE CALLS TO:** Attorney Louis J. Bovasso, Esq., 310/788-5000

(8)

Full Name of First or Sole Inventor <u>Christopher J. Pratt</u>	Inventor's Signature <i>Christopher John Pratt</i>	Date <u>8 December 2000</u>
Residence and Post Office Address <u>School of the Built Environment, Coventry University, Priory Street, Coventry CV1 5FB, England</u>		Citizenship <u>U.K.</u>

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